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British Society for the History of Pharmacy

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The British Society for the History of Pharmacy was formed in 1967 under the aegis of the Pharmaceutical Society of Great Britain, having originated from its History of Pharmacy Committee.

BSHP seeks to act as a focus for the development of all areas of the history of Pharmacy, from the works of the ancient apothecary to today's ever changing role of the community, hospital, wholesale or industrial pharmacist. Membership is open to all interested in the aims of BSHP.

Aims

Promotion of historical studies related to pharmacy.
Advancement of knowledge and propagation of understanding of the history of pharmacy.
Publication of the research work of pharmaceutical historians.
Preservation of pharmaceutical artefacts and historic pharmacies.
Support for the work of relevant museums and offering advice on establishment of other pharmaceutical exhibits and on the preservation of pharmacies.
Co-operation with related professions and local historians on medico-pharmaceutical topics of mutual interest.

Pharmaceutical Historian

The *Pharmaceutical Historian* has been published since 1967, at first intermittently, but on a regular quarterly basis from 1972. Issues generally comprise 16 or 20 pages and cover.

An **index** for the years 1967-1995 was published in 1998, for 1996-2000 in 2000, for 2001-2005 in December 2005 and for 2006-2010 in December 2010. They can be viewed on the website.

Papers, short communications and letters in English on any aspect of the history of pharmacy are welcome and should be sent to the address above or by email to *ainley.wade @easynet.co.uk*

Any illustrations are converted to monochrome for printing. Further details of requirements can be found on the website *www.bshp.org* under Publications.

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Membership costs £20.00 per annum and includes:

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Annual Conference, usually in March/April.

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Help in historical research and with the identification of artefacts.

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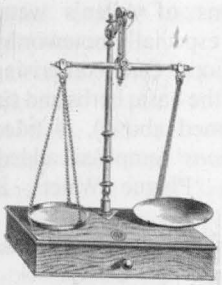

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Diary

Please note that unless otherwise stated, the evening meetings will be held at the UCL School of Pharmacy, 29-39 Brunswick Square, London WC1N 1AX, at 5.00 for 5.30 pm. Usually Room 228.

Monday 6 February 2017
John Adams on 'The Syon Abbey Herbal (before AD 1517), the last monastic herbal in Britain'.

Monday 15 May 2017
Prof Peter Ayres on 'Britain's Green Allies: Medicinal Plants in Wartime'.

Monday 9 October 2017
Szu Wong on 'Damien Hirst - the art patron and pharmacy'.

BSHP has its own **Facebook** page. 'Like' us to share information on events, news items, resources, research and other pharmacy history topics from BSHP and related organisations.

BSHP Annual Spring Conference 2017

50th Anniversary of BSHP
To be held in London on
Saturday 1st and Sunday 2nd April 2017

The usual format of our conference is changed slightly for this our celebration of 50 years. The Saturday sessions will be held at the new Headquarters of the Royal Pharmaceutical Society at 66-68 East Smithfield, London E1W 1AW.
The Saturday evening Celebration Dinner and Sunday morning sessions, including the Annual General Meeting, will be held at the 'DoubleTree by Hilton Hotel', Marble Arch, London W1H 7BY.
Application forms offering a variety of attendance opportunities are distributed with this journal. We hope that the central location and general interest lecture topics will attract non-members and we would welcome your assistance in promoting the conference widely. Contributions will be by invited speakers on the history of BSHP and related organisations followed by the opportunity to explore the Society's Museum and Library. We will revert to the usual format in 2018.

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Persistent Polypharmacy: the case of Lady Allen's Water

John K Crellin
Totnes, Devon

In 1835 renowned writer Mary Russell Mitford enthused over the 'splendid and right royal ceremonies' of preparing various waters. These included 'my Lady Allen's Water' which she had seen in the 1739 edition of *The Compleat Housewife*. Although the Water, sometimes titled a 'Cordial' or a 'Plague' Water, was not particularly uncommon in hand-written home medicine receipts (dating from around 1650 to 1750), the rarity of printed versions suggests it was never widely used.[1]

The Water certainly fared less well than other distilled 'plague waters,' a number of which had the same basic herbal ingredients (see below). While the identity of Lady Allen (sometimes spelled Allin) and her original formula have not yet been found, the following notes on various formulae for the Allen Water will hopefully contribute to discussions on the survival of complex, compound remedies (polypharmacy) throughout much of the seventeenth and eighteenth centuries, some even beyond.

Variable formulae

Home medicine receipts for Lady Allen's Water range from short versions with fourteen to twenty or so herbal ingredients to less frequent, longer formulae with around thirty. For the sake of discussion, the entire fourteen items in one receipt are viewed here as *basic* or *core* since, generally, with no more than three being omitted, they invariably appear in all other Allen receipts.[2] These herbs (as listed but with modernised spellings) were agrimony, angelica, balm, celandine, dragon, gentian, mugwort, pimpernel, rosa solis, rosemary, rue, red sage, scabious, and wormwood. Other inconsistent additions to the basic herbs were betony, carduus benedictus, centaury, elecampane, hartshorn, liquorice, marigold, scordium, tormentil and zedoary, here called *supplementary* to contrast them with occasional, seemingly incidental, additions such as hearts tongue.[3]

That variations were not generally scribal errors or *ad hoc* changes is suggested by two successive versions of 'Lady Allens Water' in one collection of receipts. The second version, headed 'The same another way,' and annotated in a different hand, 'My Grandmothers,' included centaury, liquorice and marigold as additions, along with some significant variations in preparation details, a point illustrated below.[4] Acceptance of variations in formulae – as in many other compound medicines – was also recognised in the following annotation to 'A Cordiall Water' receipt:

> a worthy lady [likely, if not certainly, LadyAllen] leaves out the fumitory [from] the herbs [but adds] scabious, balm, mugwort, carduus-benedictus, worm-wood, scordia, dragons-mints [and] leaves out the dragon-roots & adds to the former roots gentian, & contrayerva.[5]

Among the longer versions of Allen's water (around thirty herbs), two are especially noteworthy for their headings and annotations. One, comprising 31 herbs (including thirteen of the basic herbs and six of the supplementary mentioned above), is titled 'Lady Allins Water *with additions*' (emphasis added, **Figure 1**).[6] The second, a 'Plague Water', is annotated:

> This Plague is also the Lady Allens. But is much better [than the preceding one in the same manuscript volume].

It lists only ten basic and two of the supplementary out of 28 herbs while also including mithridatium and Venice treacle, two celebrated compound medicines.[7]

It is possible, too, that a Water had an unrecorded additional step (aside from adding sugar) to make it palatable for individual tastes. One receipt did direct:

> When you have mingled the [strong and weak] waters [distillates] as you like them, grate nutneggs, cloves, nard, ginger, cinamom of each a like quantity, a little saffron put into ffine baggs and lett hang in it, sweeten it with fine sugar and stop it downe very close.[8]

A significant feature of Lady Allen's Water is, as said, the similarities with some plague waters. One striking published example (1682), titled 'My Lady Allen's Plague Water,' is virtually the same as the 'Excellent Plague Water' the same author had published in 1675. The latter only differed from the Allen Water (with its 28 herbs) by the inclusion of

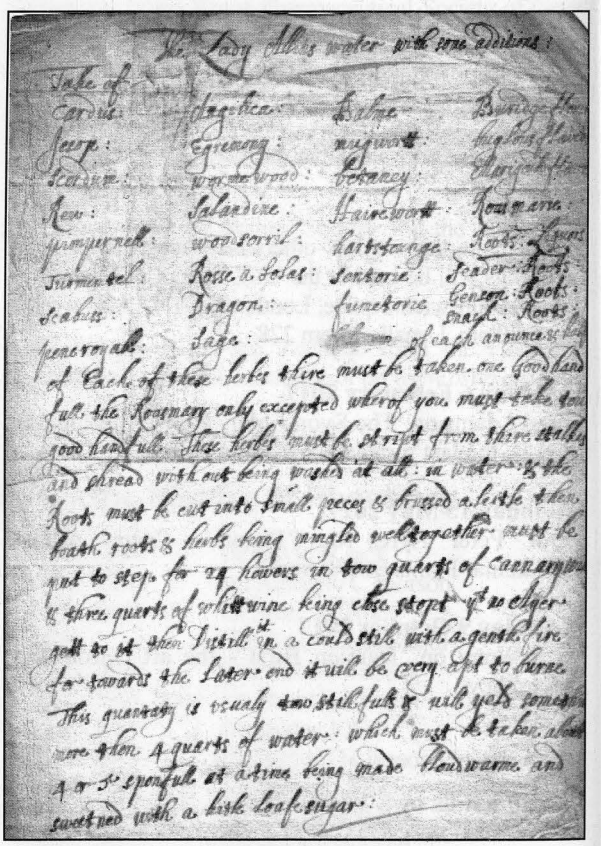
The Lady Allins water with some additions:
Take of
Carvis: Egrimony: Balme: Mugwort:
Scabius: Wormwood: Betony: Rosa marina:
Rew: Salandine: Hairewort: Roots: Lyons
Pimpernell: Wood sorrill: Hartshorne: Roots: Lyons
Tormentel: Rosa. a. Solat: Scabious: Zedoar: Roots:
Scabius: Dragon: Fumetorie: Gentian: Roots:
Generous ale: Sage: Snayl: Roots:
of each an ounce & half
of Each of these herbs & hire must be taken one Good hand full the Rosemary only excepted whereof you must take two good handfull These herbs must be shrift from there stalks and shread without being washed at all in water & the Roots must be cut into small peeces & bruised a little then both roots & herbs being mingled well together must be put to steep for 24 howers in two quarts of Canary & three quarts of white wine being close stopt & no other put to it then Distill it in a cold still with a gentle fire towards the later end it will be verry apt to burne This quantity is usualy two stillfuls & will yeild somewhat more then 4 quarts of water which must be taken about 4 or 5 spoonfuls at a time being made blood warme and sweetned with a little loafe sugar:

Figure 1. The Lady Allen's Water, ms. Totnes Museum and Archives Collections,.

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green walnuts and the exclusion of burdock and mayweed.[9]

Not surprisingly, similarities with plague water can also be found in hand-written home medicine receipts. The following example of 'a receipt for plage water' has 10 basic and 4 supplementary Allen herbs out of the 17 listed for the water.

> Take of the leaves of celandine rosemary, rue, sage Roman wormwood dragon, agrimony, baum, scordium, the lesser centaury, carduiss, betony & mint each four handfulls of the dryed angelick root zedoary, & gentian, each one ounce Virginia snake root half an ounce to be infused in one gallon of French brandy and draw of ten pints by distilliation.[10]

Why choose a compound distilled water?

Given the time involved, special apparatus, and difficulties in maintaining even heat during distillation, one might ask, Why did both 'simple' waters (that is those with one or very few herbal ingredients) and 'compound' (multi-ingredient) ones acquire appeal as home medicines for around 150 years from the late 1500s, at least among the wealthier classes? Aside from long-standing, hence traditional, use of many compound remedies, plausible reasons include a sense of newness, even among those who did not follow the emerging interest in Paracelsian 'chemical' medicines. In 1575 George Baker wrote in his *Newe Jewell of Health*: 'You shall learne the manner to separate by Arte the pure and true substance as well manifest as hidden, the which physicke is a great helpe to the taking away of diseases.'[11] Other publications at the time, some outside medical books such as *The Gardeners Labyrinth* (1577), also encouraged interest with the implication that Waters were already well appreciated.[12] They were certainly (i) easy and relatively palatable to take compared with, say, pills, electuaries, and mixtures; (ii) early accepted by the wealthier classes at least judging from recipe books; and (iii) suitable for storage if preparation directions were carefully followed.

Yet initial fascination with waters soon met challenges. Compound ones faced particular questioning, especially by those who promoted simple remedies, over the rationale for inclusion of many of the ingredients. Expense was also an issue, all the more so if a preparation was purchased from an apothecary. Coupled with this were questions over quality, therapeutic value, and the integrity of apothecaries who, without any significant fear of detection, could substitute or omit items.

On the other hand, all compound remedies were defended on various counts. One was that disease conditions were 'mixed.' Thus 'Mixt diseases must have mixt remedies.'[13] Each separate herbal ingredient in a remedy could be justified by upholders of the therapeutic theory associated, rightly and wrongly, with the writings of Galen until this became increasingly untenable during the eighteenth century. Some herbs, for instance, were considered (i) to act on specific parts of the body such as to strengthen the heart or liver or to remove blocked humours; (ii) to reinforce or modify the actions of mainline herbs, maybe, for example, to counteract the 'much biting' of rosa solis (sun dew), which was 'hot and dry in the fourth degree;'[14] and (iii) to produce systemic actions such as with sudorifics, i.e., 'sweating medicines,' perhaps to extrude the 'poison' of plague. Sudorific herbs were generally characterised by their 'hot' and 'dry' qualities, though prescriptions could be further complicated if they took into account that such qualities (and two others, cold and wet) were further sub-classified in terms of one to four 'degrees.'

Slowly, further pointed questioning of the therapeutic value of distilled waters emerged. For example, How far did the herbal 'qualities' carry over into distillates? Although the 'strength' (and thereby presumed effectiveness) of a distillate was generally assessed by taste and smell, the same basis by which many likely rationalised the qualities of fresh herbs,[15] Nicholas Culpeper (1650), for one, wondered about the qualities of distilled waters:

> If any desire to know the vertues of Distilled Waters, let them repair to the Herbs themselves, part of the vertues of which the waters have, though (I am of opinion) not so much as people think they have.[16]

Seemingly sidestepped were the lack of consistency in the ingredients, ease of adulteration and absence of guidance on differing formulae and directions for preparation. For example, various directions for Lady Allen's Water listed different menstrua for the initial infusion of the herbs: 'white wine,' 'sack,' and 'best spirit of wine and two gallons faire water' to mention but three. Further, only careful distilling prevented 'watery Phlegm' passing into the distillate and producing an inferior water.[17]

During the eighteenth century concerted and sharpened criticism of compound (and simple) distilled waters further challenged inconsistent quality and clinical ineffectiveness. This was part of the general 'reform' of medicinal preparations resulting partly from new therapeutic theories that did not justify multiple ingredients. One conspicuous reform voice, that of John Quincy (1718), condemned most simple waters in the London Pharmacopoeia as

> good for nothing . . . although yet in some esteem amongst nurses and ignorant people, and upon that account [are] made, or pretended to be made, and kept in the shops.[18]

At the same time, Quincy accepted that various waters (compound included) were useful, presumably partly based on his subjective estimates of widespread usage as a measure of effectiveness. One example, Aqua Epidemica or Plague Water, a 'most excellent Water,' carried the implication that it was better than the abundant home preparations: 'There is hardly a family that has not a recipe for plague-water by inheritance,'[19] In fact, amidst growing criticism of many distilled waters, it is possible that traditions in home medicines contributed to the overall uneven and slow disappearance of distilled waters, perhaps fitting with a 1761 view that fluctuations in the popularity of

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some preparations owed much to the 'fancy or caprice which influences other human things, and in many to ignorance or error.'[20] Some of the persistence might also have been due to growth in the numbers of apothecaries ready to save householders time and trouble by custom preparing Waters in their small-scale manufacturing facilities and their growing interest in the preparation of extracts to capture the active parts of herbs.[21]

Why consider using Lady Allen's water? And why add extra herbs?

What sustained references to Lady Allen's Water? What gave the Water apparent appeal, even if not widely used, at least among the literate, wealthy classes? While one reference to the Allen Water, published during a major outbreak of plague (1665) in London, suggests it was becoming known, the author listed it to follow well-established, officially accepted medicines:

> If sometimes you cannot be without strong waters, you may drink Petasitis Composite or Angelica or Imperial-Water, or Aqua Mirabilis, or Treacle Water at the Apothecaries; or some of that water that goes by the name of Lady Allens Water.[22]

While the Water was clearly being accepted as one of the strong 'sweating medicines,' with certain ingredients (e.g., angelica) also regarded as specific alexipharmics (anti-poison),[23] other considerations fostered its appeal. One was the link to an aristocratic name, *Lady* Allen. A striking feature of many receipts in manuscript collections is their pedigree by association with members of the aristocracy, or if associated with a physician one who is an author or has patients from the wealthy classes. In fact, many aristocratic names can be viewed as akin to brand marketing. If Lady Allen remains unidentified and the original formula uncertain, one is tempted to wonder whether, before it came to be viewed as a household remedy, the name was initially used as a marketing strategy by an enterprising apothecary. Indeed with distillation apparatus in place, apothecaries had a vested commercial, if not medical, reason in sustaining interest in distilled waters and other relatively expensive compound medicines.

Just as pedigree names had a subtle influence on perceptions of effectiveness, popular health books also commonly recommended medicines both 'for the richer sort' and generally simpler ones for the 'poor.'[24] Although this might suggest the need for medicines for the excesses of the wealthy and the constitutions of many of them, it can also be interpreted that they were viewed as generally more effective.

Another factor – in line with the concepts of mixed diseases and rebalancing humours – certainly did not undermine interest. Like other medicines, the Water had recommendations for various conditions with overlapping symptoms. For example:

> My Lady Allens Cordiall Water for the Plague burning fever, small pox or measles and to remove watery humours from the stomach after a surfeit. Good for women in passion of mother of children in convulsions fits.[25]

Significantly, too, Hannah Glasse's cook book, with women in mind, listed Allen's water as a 'preservative to women in their illness.'[26]

A further question, a puzzling one, remains. Why were other herbs, mostly with hot and dry qualities, added to the basic and supplementary herbs to produce a particularly complex Allen water. Granted formulae, with around thirty ingredients, might well be rationalised on the basis of Galenic theory of humours and 'mixt' diseases, though it cannot be assumed that, by the eighteenth-century, most householders had sufficient detailed knowledge of the sophisticated theory to justify preparing a more complicated formula. On the other hand, theory was of little consequence among those who relied on testimonials, even after greater appreciation emerged from around 1700 that few were supported by adequate evidence. Perhaps testimonials from known, presumably trustworthy, individuals added some sense of confidence. For example, 'G. Alleyn told me & Mr. Holmes of Highgarnett of several cured by elicampane.'[27] Although this referred to a cure for dog bites, the reputation of elecampane as an alexipharmic perhaps encouraged its inclusion in some Allen receipts. By the same token the authority of printed medical texts – many certainly read by the literate public – could have influenced the omission of certain herbs. For instance, John Quincy wrote that if the 'carduus, goats-rue, and marigold' were omitted from the 'College Compound Water … Aqua Epidemica, Plague-Water … it would be none the worse; because they raise nothing in distillation, but a tasteless insipid phlegm.'[28]

Closing comments and discussion

Robert Burton's remark, 'Almost every private man hath his own mixtures, compositions, receipts, magistrales [and], precepts,' is just one reminder of the flourishing of 'kitchen remedies.'[29] If, for the bulk of the population, reliance on self-sufficiency was occasioned by limited access to and/or expense of university-educated physicians and apprentice-trained apothecaries or surgeon-apothecaries, many accounts circulating orally and in print spread the message that lay care could be just as effective as from professional practitioners. For example:

> Mr. Caser, whom I knew, was a famous surgeon-apothecary and man-midwife at Stroud in Kent, whose wife having a tympany, or very large swell'd belly, it failed her husband and all the skill of his acquaintance to cure her, 'till happily a beggar-woman advised her to apply camomile dipt in spirits of wine which effected a cure.[30]

Rather than beggar-women, home treatment advice generally came from relatives, friends, acquaintances, clergy, and maybe even itinerant practitioners. Among the literate, medical receipts were often collected, saved, and passed on to subsequent generations, some perhaps more as curiosities with the thought that they

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might be tried if favoured treatments failed.[31] A question that arises, underscored by the Lady Allen Water story, is whether home medicine and official physician prescribing were distinct entities? This was only partly so. Historians have pointed out that, while much criticism of home treatment came from physicians, manuscripts of home remedies contain many 'official' medicines with even more obvious overlap when the ingredients of individual preparations are compared. Moreover, some practitioners readily considered and sometimes accepted the experiences of the 'common folk' and their often relatively simple home recipes. Exeter surgeon-apothecary, Caleb Lowdham, for example, was clearly open-minded when he recorded that a 'countryman' suffering from toothache was advised to rub the tooth with helleboraster. On unwittingly rubbing other teeth, they fell out. Lowdham, rather than dismissing the practice, noted that, if the medicine was to be tried again, other teeth were to be protected with soft wax.[32]

Support, challenges and criticism mark the history of many long-lived compound preparations, all part of the uncertainty that characterises so much of therapy.[33] Leaving aside such contributory factors as intra-professional rivalries and tensions between traditional or conservative practices and new sciences, as well as differing attitudes toward theory and empiricism, uncertainty is underpinned by the power of the placebo effect.[34] In fact, today, it is a common point of argument by those who dismiss the value of most early therapies. Certainly placebo action cannot be overlooked. If not necessarily 'curing', it can have a significant role in symptom relief by enhancing perceived or real physiological effects, some obvious such as sedation and purgation.[35]

A placebo response is an individual, hence variable, response influenced by attitudes and practices of patients and their families. General factors included confidence in (i) the authority of information, perhaps seeing a 'pedigree' in receipts handed down in a family, and (ii) the importance attached to a remedy as part of a treatment regimen that covered (a) appropriate diet (foods were also medicines); (b) attention to other health considerations ranging from sleep to exercise; and (c) practices that spanned prayer for help from a patron Saint or from God to wearing protective amulets and following other superstitious or magical practices.

Adding to these considerations are a number of factors specific to Lady Allen's Water that could well have enhanced a placebo response. For instance, a feeling that the water was 'special' if only because of its aristocratic association; a medicine for the wealthy as were many elaborate cordial waters, some of which had most of the Allen Water basic and supplementary herbs;[36] the time and trouble taken in preparing it; belief in a prevailing therapeutic theory on expelling poisons; and the Water being pleasant, readily taken, and easing stomach discomfort. And even maybe confidence in the powers of numbers three or nine, as in one Allen receipt that directed the infusion stage (i.e. prior to distillation) of the herbal ingredients to be buried in the ground for three or nine days, rather than merely two to three days at room temperature.

In summary, even without strong evidence of widespread usage or effectiveness, Lady Allen's water remained a long-time option for a number of reasons. It is not unlikely this applies to many other sixteenth- to eighteenth-century compound remedies, though generalisations cannot be made without individual case studies of each remedy, studies that examine the level of clinical usage (empirical evidence) for each preparation. In times of therapeutic uncertainties heightened by conflicting medical theories and class-structured medicine, it may well be that few fit neatly with a generalisation often made, namely that new therapies, after initial enthusiastic acceptance, face mounting criticism until they find a level of acceptable use before being superseded.

As a final comment, Mary Mitford's romantic recall of some old cordial waters (see opening paragraph) serves as a reminder that medical ideas and practices can lie fallow for periods of time ready to be resurrected at least in adapted ways.. Does one see this, nowadays, in the frequent invocations of traditional medicine among proponents of today's herbal and other complementary practices? At the very least, the history of the Allen Water raises questions about the ever present roles of testimonials, pedigrees and branding, patient influences, economics and placebo effects influencing the reputation of a therapy even when new evidence questions its effectiveness, sometimes because of a change in formula.

Acknowledgment. I am especially grateful to Professor Emeritus John Riddle for perceptive and helpful comments.

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Endnotes and References

1. Mitford MR. *Bedford Regis; or Sketches of a Country Town*, vol. III. London: Bentley, 1835: 106-7. Mitford also enthused over 'Dr. Steven's Water,' 'Aqua mirabilis,' and, especially, 'Lady Hewit's Cordial'. She was stimulated by reading the formulae under the heading 'All sorts of Cordial-Waters,' in Smith E. *The Compleat Housewife.* London: Pemberton, 1739: 232-7 (but with spelling 'Hewet.') The water had been included in earlier editions. Lady Allen's Water (and other 'Cordial Waters') also appeared in Glasse H. *The Compleat Confectioner, or, the Whole Art of Confectionary made Plain and Easy.* Dublin: Exshaw, 1742 [but generally considered 1762]: 104 for Allen's.

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Compared with Smith's formula marigold was omitted and the transcribing error palm instead of balm was corrected in later editions, e.g. London: West and Hughes, 1800.

Allen`s Water apparently had some reputation during the 1665 plague epidemic in London, although it was rarely mentioned in the many prevention and treatment advice books published at the time. One exception (without formula): Kemp W. *A Brief Treatise of the Nature, Causes, Signes, Preservation from and Cure of the Pestilence*. London: Kemp sold at his shope, 1665: 69. For an incidental mention: a Dr Michael Thwayle recommended a drink of Lady Allen's water along with London Treacle (see Porter S. *Pepys London. Everyday Life in London*. Stroud: Amberley, 2012 from Nicolson W. *The Historical Sources of Defoe's Journal of the Plague Year*. Boston: Stratford, 1919: 157.

The first publication found of an Allen formula ('My Lady Allens Plague Water') appeared in Hartman G. *The True Preserver and Restorer of Health Being a Choice Collection of Select and Experienced Remedies*. London: TB, 1682: 72-3.

2. Wellcome recipe ms. 1322: f. 10 headed: 'The Lady Allens Water.'

3. Examples of variations in 'supplementary' herbs can be found in Wellcome recipe mss: 160: f. 112; 1322: f. 11 (catalogue pagination); 1325: ff, 239-41; 3500: ff 38-9; 4054: f. 88; 4683: f. 98v; 7113: f. 179; 7822'ff 58-9.

4. Wellcome recipe ms. 7822: ff. 58-9. The first recipe is headed: 'A receipt of the Lady Allen's Water from the Lady Spring very good against the plague, small pox meazles, or surfeit or any other infectious disease.' Preparation of this included placing the infusion 'in the ground 9 dayes' before distilling; the second receipt directed steeping for only two days and nights without burying. The practice of burying was recognised in a note with 'A Cordiall Water' receipt stating that for the infusion stage 'some bury them in the earth for 3 days.' (Wellcome recipe ms. 7073: f. 38.)

5. Wellcome recipe ms. 7073: f. 38, a comment likely written by an Exeter surgeon-apothecary, Caleb Lowdham. Variations in formulae of other compound remedies and very similar remedies have been noted by others. The long-lived Dr Stevens' Water is well known. For others, to give a selection: Castellani P and Console R. The Countess's Ointment. *Pharm Hist (Lond)* 2007; 27: 57-64; various examples in Duffin CJ and Pymm R. A Survey of Artificial Stones Part 1. *Pharm Hist (Lond)* 2015; 45: 2-9. Cf. also Balaban C, Erlen J, Siderits R (eds). Introduction to *The Skilful Physician*. Amsterdam: Harwood Academics, 1997: xvii-xx. They notice that the author claims to pay attention to the 'complexion, strength, and constitution of the patient.' but indicate it is unclear how this played out.

6. Totnes Museum and Archives Collections.

7. Wellcome recipe ms. 1322: ff 10-12 (catalogue pagination.)

8. Wellcome recipe ms. 1325: ff 239-41.

9. Hartman G. *The True Preserver and Restorer of Health Being a Choice Collection of Select and Experienced Remedies*. London: TB, 1682: 72-3; Hartman, *Choice and Experimental Receipts in Physick and Surgery*. London: Clark, 1675: 42-43.'Another example of a similar plague water (with 10 basic plus 2 supplementary herbs out of 13, the addition being Pellitory of Spain), appears in *The Skilful Physician*, London: Etkins, 1656: 247-48. ('A Water to be made in May, good against the Plague or Surfet.')

10. Loose sheet, private collection. Other plague waters containing virtually all the basic ingredients in the Allen waters are recorded. One example (Wellcome recipe ms. 7577: f. 13v&r) omitted gentian, but added, for example, aniseed, caraway, coriander and cardamoms.

11. Baker G. *The Newe Jewell of Health*. London: Denham, 1576: Aiiiv.

12. Hill T. *The Gardeners Labyrinth*. London: Bynnemann, 1577: 80-88.'The book outlined gardening practices to obtain the best quality herbs while providing a detailed list of medicinal uses for each.

13. Burton's views on mixed diseases and compound medicines are noted in Wear A. *Knowledge and Practice in Early Modern English Medicine*. New York: Cambridge University Press, 2000: 94-95. Quoted here, Burton R. *The Anatomy of Melancholy*. London: Parker 1676: 232. The language of mixed diseases was also publicised in the popular writings of Nicholas Culpeper, for instance, his *The English Physician*. London: printed for the benefit of the Commonwealth of England, 1652: 261.

14. Gerarde J. *The Herball or Generall Histories of Plants*. London: Islip, 1636: 1556.

15. Teigen PM, Taste and Quality in 15th and 16th century Galenic Pharmacology. *Pharm in Hist* 1987; 29: 60-8. Teigen does indicate that this is not infallible as, for instance, no specific sensation to mark 'cold.' This applies to medicines recognised as depressing the body such as mandrake and poppy.

16. Culpeper N. *A Physical Directory: or a Translation of the Dispensatory Made by the College of Physicians of London*. London: Cole, 1650: 56. Coupled with this Culpeper viewed many simple waters as weak and more suitable as vehicles for other medicines while pointing out that compound waters in the *London Pharmacopoeia* were 'all hot in operation and therefore not to be medled with by people with hot constitutions.' (Culpeper. *Pharmacopoeia Londinensis or the London Dispensatory*. London: Cole, 1655: 86).

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17. Some authors merely used such language as distilling 'spirits', that also sidestepped Galenic theory, for example, Blagrave J. *Blagraves's Astrologial Practice of Physick*, London: Blagrave, 1689: e.g. 54-55.
18. Quincy J. *Pharmacopoeia Officinalis an Extemporanea: or, A Compleat English Dispensatory.* London: Bell, 1718: 338.
19. Ibid: 344.
20. Lewis W. *An Experimental History of the Materia Medica.* London: Baldwin, 171: A2r.
21. For a background sense of commercial interests of apothecaries, some developing it into large scale, see Porter R and Porter D. The Rise of the English Drugs Industry: the Role of Thomas Corbyn. *Med Hist* 1989; 33: 277-95.
22. Kemp, 1665. Reference 1: 69.
23. Gerard 1636. Reference 14: 1001, described angelica as a 'singular remedy against poison, and against the plague, and all infections.'
24. Examples: A.T. *A Rich Store-house or Treasurie for the Diseased. Remedies for the Poorer Sort.* London: Purfoot, 1596. And plague remedies for the 'richer sort:' *Certain Necessary Directions as well for the Cure of the Plague as for the preventing the Infection: with Many easie Medicines of small Charge.* London: Bill, 1665: various pages.
25. Wellcome ms. 3500: ff. 38-39. Another example: 'Against infectious diseases as pox, plague, measles persistent or burning ffeavor, venomous matter or plague in the stomach and in fitts or convulsion Good against vomiting or paine in the stomack.' (Wellcome recipe ms. 1325: f. 239).
26. Glasse, 1762. Note 1: 104. Moreover, as with Smith's book, it was listed as a cordial, a class of preparations appreciated for their stimulating properties and often having alcohol content.
27. Loose sheet ms. private collection. Other examples include (i) a formula with balm and bay salt commended to 'to Mrs. F.W. by a person of good quality,' who saw 'a paine & swelling on one knee cured ... This receipt from Dr. B.' and (ii) 'This receipt [for 'Dr Gascons powder'] I had from Mrs Dayroll & have good reason to believe it original And a most excellent receipt' (*'A Book of Receits in Physick*,' ms. Totnes Museum and Archives Collections, ff. 2 and 66.)
28. Quincy, 1718. Note 18: 344.
29. Quote: Burton R. *The Anatomy of Melancholy.* London: Parker, 1676: 232.
30. Ellis W. *The Country Housewife's Family Companion.* London: Hodges, 1750: 247.
31. The language of curiosities and serviceable receipts was used by Ellis W. *The Country Housewife's Family Companion.* London: Hodges, 1750: 242. The comments applied to kitchen remedies, but seem equally applicable to medical ones. That remedies were accepted by subsequent generations certainly does not apply to all. Erasures in some manuscript volumes suggest certain recipes were discarded, while there are such general considerations that others were left for interest and curiosity without ever being tried.
32. Wellcome recipe ms.7073: f. 48.
33. The issue of uncertainty in medicine including therapy has been raised by many. For a focus on another preparation, Griffith's Mixture, see Crellin JK. Revisiting Eve's Herbs: Reflections on Therapeutic Uncertainties. In Van Ardall A and Graham T (eds). *Herbs and Healers from the Ancient Mediterranean through the Medieval West: Essays in Honor of John M. Riddle.* Farnham: Ashgate, 2012: 307-27.
34. A relevant example in terms of intra-professional rivalries, etc., is the revision of the *Edinburgh Pharmacopoeia* of 1720 – it has been called the 'cleansing' – that led to the simplification if not deletion of some compound remedies. See various papers on the Edinburgh pharmacopoeias in Cowen DL. *Pharmacopoeias and Related Literature in Britain and America, 1618-1847.* Aldershot: Ashgate, 2001. Adding to this, some of the complexity of the issues from the impact of chemistry on medicines is reflected in Crellin JK. Medicines. Their Standardisation and Purity, In *The Development of Chemistry in Britain through Medicine and Pharmacy 1700-1850.* University of London PhD, 1969: 313-71.
35. This is not the place to consider the complex of factors considered to contribute to placebo effects recognised to continue to be part of all areas of therapy. It is relevant to note, however, that for the period under discussion, different perceptions of outcomes from practitioners and patients were significant. An interesting episode has been published by Stobart A. A 'Not-Recipe': An Expression of Frustration in Medical Matters. <https:/recipes.hypotheses.org> May 1, 2013.
36. A striking amount of cordial waters were prepared in the household of Elizabeth Freke (1641-1714), see Leong E. Home Medicines in the Early Modern Household. *Bull Hist Med* 2008; 82: 145-68. Many other medicines could only be afforded by the wealthy such as preparations containing precious stones. Whether or not cordial waters with essentially the same ingredients as Lady Allen's merely failed to acknowledge the name or were derived from a common formula needs consideration.

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Sergeant Peter Irvine, Pharmaceutical Chemist, RAMC (1876–1949)

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In 2014 I presented a poster entitled 'Pharmacy and War' at the BSHP Conference in Birmingham. Among my sources was a letter written by a pharmacist who had been engaged in the First World War. The letter to the *Chemist and Druggist* was signed by Sergeant Peter Irvine PhC, and seemed to be written at the end of WWI.[1] His letter entitled 'Dispenser and Showman' was an extraordinary essay full of his experiences. It also contained a lot of information about himself which gave an idea of his personality and skills. He was clearly an intelligent man with great versatility. Using the information contained in the letter, I set out to see if I could find more about this pharmacist and complete the picture of him.

In his letter he mentioned that he volunteered for the First World War, wanting 'to do his bit and be a Kitchener hero'. He said that he was a 'Major man with experience in four civil hospitals' meaning that he was a Pharmaceutical Chemist. He trained as a private in the RAMC, at Tidworth (Fig. 1), 'sleeping twelve to a bell-tent'. It was here that he first mentioned his love of entertainment as 'he was the unofficial organiser of sing-song and dispenser of merriment to tired Tommies'. He was very pleased when he received his first promotion to 'acting supernumerary lance-corporal' when he was chosen for a field ambulance. He was the only man there in a thousand with a civil pharmacy qualification, although he didn't mention that he was a Major man then, as it created jealousy; he said simply that he was an MPS. He was raised to the rank of Sergeant just before he moved across the channel for the 'front line'.

In Ypres, Belgium, he found himself at the main dressing station in the village schoolhouse at Reningelst. After 'scrounging enough drug-store fittings and shop-rounds from Ypres' he set up a 'model pharmacy near the first table in the dressing station'. With his own steriliser, he had needles and instruments ready to help the medical officer. Sgt Irvine administered 'anti-tetanic serum' to the soldiers when their surgical procedures had finished, marking each soldier's wrist with the letter T to stop them being re-vaccinated. Later, at an advanced dressing station duty, he lightened the grim existence of the ill and the healthy with his 'nightly mirth and melody which did as much good as drugs'. After a year he transferred to District HQ as a gas NCO. His duties were to give lectures to officers, NCOs and men on gas defensive measures. He gave demonstrations with chlorine and other gases. He devised chlorine-filled trenches and dug-outs for soldiers, who were fitted with gas masks, in order to gain experience with chlorine. He oversaw smoke-helmet drill and manoeuvres in the dark, and the setting up of gas-proof dugouts and gas alarm systems.

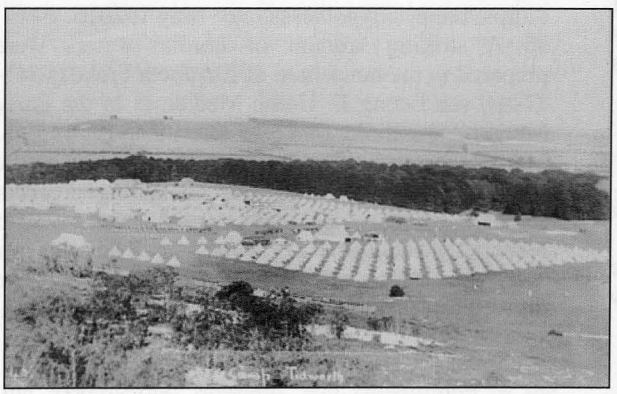

Figure 1. Tidworth Camp, Salisbury, Wiltshire.
www.dontforgetthediggers.com.au

After another year he joined 'The Duds', the divisional concert party, where 'he lived happily for a few months' .At Bapaume, after a bout of illness he was taken on a stretcher to Rouen. Here he embarked on his last job in the war at No 10 large general hospital, as dispenser in charge, with a staff of two under him. He did the job very efficiently, although at times he got fed up, so he turned to his 'old love, the showman business.' He put on a revue weekly. Scenes were painted by the staff sergeant and with dresses and wigs the production was in style. Sergeant Irvine did not stay on in the RAMC when the war finished for 'there was neither rank nor pay to tempt him'.

Registration

To look for more information about Peter Irvine, a search was made in the *Annual Register of Chemists and Druggists and Pharmaceutical Chemists 1917*.[2] There was only the one Peter Irvine. He had qualified as a Chemist and Druggist (no. 12322) on 5th July 1898 and he first appeared in the Register for 1899, living at 253 Crown Street, Glasgow, Scotland. In 1901 he was still registered at the same address. In 1902 he was not in the register, but had now passed the Major examination and was a Pharmaceutical Chemist (no. 3011). By 1903 he had moved to Uddingston, near Glasgow. In the years from 1904-1908 he was at Ruchill Fever Hospital, Glasgow and by 1915 in Liverpool. By 1916 his home address was 3 Pemberton Chambers, Doughty Street, London WC, then in 1917 at 67A Park Road, Battersea Park SW. From 1918-1925 he was registered at 25 Cedars Road Clapham SW4, moving to Fernshaw Road, Chelsea, SW10 from 1926-1928. From then on he lived in Chelsea. His wife Jean Kennedy Irvine, who had registered as a Chemist & Druggist, lived with him except during his war service.

The *Chemist & Druggist* recorded his death at his home and reported many details of his life:[3]

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Peter Irvine died at his home 112 Beaufort Street, Chelsea on 5th December 1949. Peter Irvine PhC aged 73years. Mr Irvine studied Pharmacy under Mr John Lothian PhC at the Glasgow School of Pharmacy and qualified in 1898. He passed the Major examination as a Pharmaceutical Chemist two years later. He was for a time a pharmacist at the Ruchill Fever Hospital Glasgow and later proprietor of the old established City business of Wallace and Co, Glasgow. Subsequently he joined the United Drug Co Ltd of Nottingham as representative in Scotland. During WWI he served in the RAMC. He was in the front line at the time of the first gas attack by the Germans and became a Gas Defence Officer. Mr Irvine had marked gifts as an entertainer and was the leading spirit in The Duds. At the battle of Ypres he gained distinction by going in under fire, to rescue the company's grand piano in a lorry. As a peace-time entertainer it was said of him that 'No smoker [concert] was complete without him.' After the war Mr Irvine rejoined the United Drug Co as a representative in the South of England. During 1939-45 WW2 Mr Irvine served in the Home Guard and claimed to be its oldest member in Wiltshire. He was responsible for training his company in first aid and stretcher drill. Mrs Irvine who survives him is a past president of the Pharmaceutical Society. The funeral was at Putney Vale, Cemetery on 8th December.

Many of these details corresponded with the facts written in the war letter of 1918.[1] The obituary of Peter Irvine in the *Pharmaceutical Journal*[4] gave a few more details about him:

> He was born in Oban, studied at Glasgow School of Pharmacy and qualified as a Chemist & Druggist in 1898 and Pharmaceutical Chemist in 1900. After experience in the Pharmacy Dept of Ruchill Isolation Hospital, Glasgow he became proprietor of two businesses in Glasgow, under the name of William Wallace & Co. Mr Irvine was for many years a representative of United Drug Co firstly in Scotland and later in the South of England; he visited the USA on behalf of the company. During WWI he served in the RAMC and in the 1939-45 war he was a member of Wiltshire Home Guard. His abilities as an entertainer at social functions were well known to Chemists. His wife was the President of the Pharmaceutical Society from 1947-48.

Details of his will published in the *Pharmaceutical Journal*[5] showed that he left £4,500 gross, £4,271 net. In 1940 Peter Irvine was still registered at 112 Beaufort Street, Chelsea, while his wife was registered at 138 High Street, Marlborough. That they were living in property in Marlborough Wiltshire would add credence to his being in the Home Guard in Wiltshire in 1939-45.

His ability as an entertainer at Chemist's social functions is seen in an early report in the *Chemist & Druggist.*[6]

> At the Glasgow & West of Scotland Chemists Association Meeting, after tea having been served a musical program contributed by … while Mr Peter Irvine won a special round of applause for a musical recitation entitled 'A Society Reception'.

The *Chemist & Druggist* in 1916 suggested that he had become a gas defence officer:[7]

> **Scottish News.** Sergeant Peter Irvine RAMC has recently visited Glasgow and London on short leave from the Front. Mr Irvine has received a special appointment connected with the corps in which his scientific knowledge and skills are more fully employed than in dispensary work.

Mr and Mrs Irvine attended the British Pharmaceutical Conferences, as noted in the *Chemist & Druggist* in 1938;[8] in Torquay in 1947,[9] they are shown in a *Chemist & Druggist* photograph of the delegates (Fig. 2).[10]

Figure 2. Photograph of Peter Irvine (first left) and Mrs Jean K Irvine (second right) at the 1947 British Pharmaceutical Conference.[10]

The short study was now complete. Peter Irvine was an exceptional pharmacist and entertainer who had served in the RAMC in WW1 and the Home Guard in WW2. He was the Dispenser and Showman, and lived long enough to see his wife become the first woman President of the Pharmaceutical Society.

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Qairooti (Cerate or Cera Beeswax Salve) in Medieval Persia

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Introduction

Cerates (from the Latin cera for wax) are stiff medicinal salves or ointments with a basis of wax (generally beeswax) and fixed oil. Their history is well-documented since classical times; well known, for instance, is Galen's cerate, now cold cream. Not surprisingly cerates also have a place in traditional Persian medicine. The word *qairooti* is rooted in the wax ingredient of the formulation.[1]

Widely employed in medieval Persia as poultices, cerates were used for various conditions.[2,3] It is noteworthy, too, that according to 'The Chinese Shen Nong Book of Herbs. (from 2nd century BC), beeswax was consumed as a top medicinal ingredient.[4] It was believed to have beneficial effects on blood and energy systems and whole body balance. Moreover, beeswax had a good reputation for beauty enhancement and anti-aging. The combination of beeswax and other constituents was applied to wounds, as Ge Hong (about 284-364 AD) and Sun Simiao (581-682 AD) recommended 'beeswax therapy'. In 841, Liu Yuxi introduced a detailed description of 'beeswax therapy' more than 1000 years before the 'paraffin wax therapy' of Frenchman Barthe de Sandford.[5]

Based on its structure, beeswax has unique characteristics. It builds stable emulsions and increases water absorbance of creams and ointments. This property enables it to improve the appearance and consistency of semi-solids. Furthermore, it does not cause any allergic reaction.[4] Cerates have retained a place in current practice with recent efforts to improve efficacy of the traditional cerates.[6].

The cerate of the *United States Pharmacopoeia* was a mixture of fats and waxes added to other constituents. Simple cerate is a mixture of 30 parts white wax, 20 parts white petrolatum and 50 parts benzoinated lard.

Cerate (*Qairooti*) in medieval Persian Medicine

Cerates, as noted, were widely used in medieval Persia,[3] a time when many Persian traditional pharmacopoeial-type manuscripts were written, all of which had a special chapter on salves and *qairooti*s, for instance *al-Ghanoun-fi-Teb* (Canon of Avicenna), *Gharabadin-e-Kabir* and *Gharabadin-e-Salehi* [7] (Figure 1).

Qairooti (Cerate) is a kind of medicinal poultice containing wax and oil. The amount of oil and wax varied in the formulae to provide for the most suitable consistency and appearance. At the same time, traditional manuscripts introduced some *qairooti*s containing mucilaginous plants instead of wax.[3] Factors for consideration included seasonal temperatures. Simple and multi-ingredient *qairooti*s were widely prescribed as a poultices. One novel application of simple *qairooti* was noted by Avicenna. He applied this product as a coating agent for covering inappropriate taste of tablets and pills.[3]

According to TPM texts, different *qairooti*s were suggested for certain indications. Six formulations are illustrated in Table 1. Other indications for cerates were pleurisy, cracked skin, paralysis and tremor. Moreover, some texts suggested them as an emollient, skin freshener or laxative.

In order to prepare cerate, wax was melted by indirect heat, mixed with the oil, and then other constituents added to the warm mixture. Different kinds of oil were used. The theory behind their selection in certain formulations was clearly explained in compounding books such as *Gharabadin-e-Kabir, al-Ghanoun-fi-Teb* and *Gharabadin-e-Salehi.*[2,3,7] First of all, their healing

Figure 1. Beginning of the chapter *qairooti*s (p 242) from a copy of lithograph edition of "*Gharabadin-e- Salehi"* by Ghaeni Heravi (1766 AD). **a.** *Qairooti* (in Persian). **b.** Etymology, terminology and pronunciation of *qairooti* in Persian (It states that the word originated from ancient Rome and Greece.) **c.** The first *qairooti* monograph and its indications (prescribed for gonorrhea). **d.** A case report based on the writer's successful experience (kind of anecdotal medicine). **e.** Materials and method of making this formulation.

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Table 1: Six Samples of cerate, indications and related considerations.[5]
* U = Unit(s)/parts

Cerate	Ingredients	Scientific name	Indications
1	Henna leaf Rose enfleuraged oil Wax	*Lawsonia alba*	Bone fracture
2	Gum tragacanth Crushed lettuce seed Ambergris Almond oil Fresh goat fat Wax	*Astragalus gummifera* *Lactuca sativa* *Ambra grisea* *Amygdalus communis*	Fattening
3	Sweet violet enfleuraged oil (1 U*) Cattle fat (1 U) Purified wax (1 U)	*Viola odorata*	Fissure and anal Inflammation
4	Resin spurge powder (2 U) Dill seed in sesame oil (100 U) Yellow beeswax (30 U)	*Euphorbia resinifera* *Anethum graveolens*	Chronic headache
5	Terebinth gum (36 U) Pistachio gum (12 U) Pink rock rose oil (12 U) White wax (75 U)	*Pistacia terebinthus* *Pistacia vera* *Cistus creticus*	Chronic joint pain
6	Melted animal fat Oil Wax		Difficult childbirth

Table 2. Oils applied in *qairootis*, their characteristics and the temperaments they are suitable for.[2,6]

Type of oil	Oil characteristics	Suitable temperament
rose enfleuraged oil	potent desiccant	warm/cold
unripe olive oil	astringent/tonic	warm
ripe olive oil	potent discutient	Cold
vintage olive oil	wound cleanser	cold
myrtle leaves in olive oil	emollient/discutient/ maturative	warm
Viola enfleuraged almond oil	refrigerant/moisturiser	warm

properties with respect to wounds and injuries were taken into consideration (Table 2). Secondly, the oil part was carefully selected based on its occlusive property. When a formulation was required to remain on the skin for an extended period, specific oils were chosen. A third point is that certain oils were selected to counteract adverse or intensify some of the added constituents.

A final but significant point is the need to enhance the shelf life by virtue of some oils being more effective than others. Shelf life was in fact one of the most challenging subjects in traditional pharmacy, reflected in many discussions. For example, *qairootis* including high amount of gum were supposed to remain effective after twenty years. Vinegar and olive oil were believed to make *qairootis* more durable, but formulations containing animal fats were unacceptable after one year.[2,3,7]

Traditional Persian manuscripts support the idea that in formulations without any agglutinant agent, a higher amount of beeswax is needed. Amounts of wax and oil depended on seasonal temperatures. One idea suggests that the most appropriate ratio of wax to oil is 1 to 2 in winter and 1 to 1 in summer. Another view suggests a wider range of this ratio, from 1:5 to 1:1.

Conclusion

In medieval times, Persian pharmacists have developed pharmaceutical knowledge8. Cerate formulations, *qairootis* have a long historical background, with many kinds recommended for diverse conditions. Cerates were a common medication for injuries and wounds. Although still used in conventional medicine, some traditional clinical applications have been forgotten; they merit investigation to generate new ideas.

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†An abstract of a version of this paper appeared in *Iran J Med Sci* 2016; 41(3): S8.

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Major Accessions to Repositories in 2014 Relating to Pharmacy and Chemistry

Local

Archifau Ynys Mon / Anglesey Archives, Bryncefni Industrial Estate, Llangefni, Anglesey LL77 7JA, Wales
John Alwyn Parry (fl c1866-1917), pharmacist, businessman, preacher: personal papers rel to his work as a pharmacist and businessman, as well as a chapel leader, preacher and member of the Eisteddfod committee 1738-1999 (WM/2506)

Cumbria Archive Centre, Carlisle, Lady Gillford's House, Petteril Bank Road, Carlisle, Cumbria CA1 3AJ, England
William Jones, chemist, Brampton and Carlisle: shop records with records and photographs of Jones family members c1870-2001 (DX 2208); Priestman & Humble, chemists, Penrith: prescription ledgers c1909-1920 (DB 174)

Dudley Archives and Local History, Tipton Road, Dudley DY1 4SQ, England
Pharmaceutical Society of Great Britain, Dudley Stourbridge and District branch: records incl minutes and registers c1950-1999 (Acc 9756)

Edinburgh City Archives, Level 1, City Chambers, 253 High Street, Edinburgh EH1 1YJ, Scotland
Duncan, Flockhart & Co Ltd, manufacturing chemists and aerated water manufacturers, Edinburgh: additional accounts, photographs and papers incl personal records of William Flockhart 1830-1997 (Acc 973); Unnamed pharmacy, Edinburgh: ledger 1916-1984 (Acc 960)

Essex Record Office, Wharf Road, Chelmsford, Essex CM2 6YT, England
TF Rowland, pharmacist, Epping: medical recipes and customer ledger 1866-1878 (A14076); Herbert Saunders, chemist, Coggeshall: poisons register 1922-1930 (A13867)
Pharmaceutical Society of Great Britain, Colchester and District branch: branch and committee minutes 1923-1996 (A13940)

Huntingdonshire Library and Archives, Princes St., Huntingdon PE29 3PA, England
LR Dalgleish, pharmacist, Huntingdon: prescription books and poisons register c1848-1988 (5760)

Redbridge Local Studies and Archives, Local History Room , Redbridge Central Library, Clements Road, Ilford IG1 1EA, England
Howards & Sons Ltd, manufacturing chemists, Ilford: invoices, warrants and certificates for shipment, with product labels 1807-1860 (260)

Rotherham Archives and Local Studies, Clifton Park Museum, Clifton Lane, Rotherham S65 2AA, England
Isaac & Israel Walker & Co Ltd, chemical works, Rotherham: corresp, certificates and technical data sheets 1949-1980 (965-B)

Stockport Archive Service, Stockport Central Library, Wellington Road South, Stockport SK1 3RS

National

British Library, Manuscript Collections, 96 Euston Road London NW1 2DB
Samuel More (1726-1799), apothecary and administrator: travel journals (4) 1763-1785 (Add MS 89126)

Special

Royal Society, 6-9 Carlton House Terrace, London SW1Y 5AG
Sir John Warcup Cornforth (1917-2013), chemist, and Rita Cornforth (1915-2012), nee Harradence, chemist: corresp, scientific papers and papers rel to award of Nobel Prize 1933-2007 (20140); Kenneth Wade (1932-2014), chemist: corresp c1960-2014 (20141); Anthony Edward Walsby (b 1941), microbiologist: papers rel to scientific work and corresp c1950-2009 (20142)

Wellcome Library, Archives and Manuscripts Section, 183 Euston Road, London NW1 2BE
David Arthur John Tyrrell (1925-2005), virologist: additional records: corresp between scientists at the MRC Common Cold Unit and third parties, mainly pharmaceutical companies, with papers and corresp rel to clinical trials 1961-1991 (PP/TYR)

University

Bath University Archives, The Library, University of Bath, Claverton Down, Bath, Somerset BA2 7AY
Sheila Newns (1935-1999), pharmacist: student papers at School of Pharmacy, Bristol College of Technology 1950-1959 (UOB/LEA 24/1-18)

Manchester University Library, The John Rylands Library, 150 Deansgate, Manchester M3 3EH
Woolley family of Manchester: papers of the pharmaceutical manufacturing family 19th-20th cent (2014/06)

Oxford University: Bodleian Library, Special Collections, Weston Library, Broad Street, Oxford OX1 3BG
John White (fl c1949-1981), research chemist: papers rel to the structure of vitamin B12 incl letters from Dorothy Hodgkin c1950-1981 (White)

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Edward John Waring (1819-1891) in India

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While studying the pioneer proponents of the Indian Indigenous Drugs, I have written on the lives and contributions of Kanny Lall Dey[1] and Udoy Chand Dutt.[2] Next I studied Edward John Waring, to whom my first introduction came through a brief article on him by Surgeon-Captain Basu.[3] He said about Waring that: 'He stands foremost in the rank of those who have made popular, the study and use in medical practice, of indigenous drugs.'

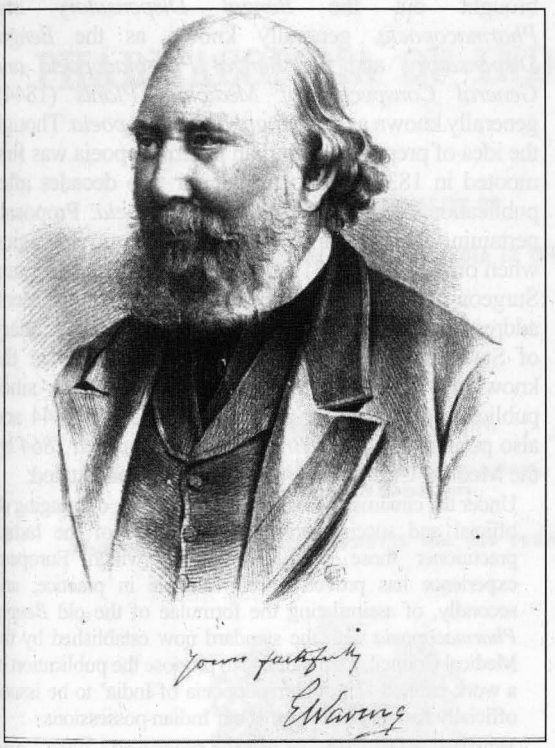

Figure 1. Edward John Waring[3]

During a systematic search, through visits to different libraries and prolonged correspondence with others, for collection of source material on Waring. I was able to obtain a document[4] rich in coverage on EJ Waring, which was published in 1888 when he was still alive; it may have been prepared on consultation with Waring.

For the present article the description by Leyland[4] proved to be very helpful. Note was also made of the brief writings,[5-10] particularly of the events which occurred in Waring's life in the years after 1888.

Early Life and Career

In India Dr Waring was held in high esteem as a physician who devoted a lifetime to study the Indian medicinal resources. Dr Waring descended from an old Shropshire family. He was born at Tiverton on 14 December 1819. He was the sixth son of Captain Henry Waring, RN, and of his wife Margret. Several of his brothers were distinguished in the world of letters. Edward John Waring also at an early life manifested a decided degree of literary taste. Before he had completed his twentieth year even, he compiled a *Biographical Dictionary* containing about 5,000 lives, and occupied four thick quarto volumes.

Waring passed his early life at Lyme Regis, where he had his first schooling and then went to Ilminster Grammar School. For his medical education he studied at Bristol School and then at the Charing Cross Hospital, London. In 1841, going into practice, he went as a surgeon on board a ship to Sierra Leone, and then to Port Morant, Jamaica. In between he came home to pass the examination of College of Surgeons in 1842, and continued working on the ship till the end of 1843. On return to England he entered the service of the Emigration Commissioners, and mainly under their auspices, he visited Australia, the Cape of Good Hope, Calcutta, Trinidad, etc, winding up with a tour through the United States.

In 1847 he married Caroline Anne and settled in Uckfield, Sussex. She passed away in 1874. Dr Waring had gone through heavy pecuniary losses and was looking for a stable job. This made him accept the appointment of Assistant Surgeon in the service of the East India Company on the Madras Establishment in colonial India.

Madras Establishment Service

Edward John Waring reached Madras in 1849, where he was on a short probationary period and passed the required Hindustani examination. He was posted to the charge of Mergui, in Tenasserim Provinces (part of Burma), a small station occupied by Madrass troops on that coast, where he continued to be stationed during the Burmese war. While at Mergui he compiled his excellent *Manual of Practical Therapeutics* which was published in London in 1854. It passed through several editions; the third edition was available at the Calcutta Medical College Library.[11] He prepared the editions solo, except for the last edition (1886) for which he was assisted by Dr Dudley W Buxton, since his power of vision had started decreasing due to cataract.

During service with the Madras Establishment, the major accomplishments of Waring were his work on India's indigenous drugs and finally the preparation of the *Indian Pharmacopoeia 1868*.

Indigenous Drugs of India

While stationed at Mergui Dr Waring found the supply of drugs running short, in consequence of the Burmese war. This led him to seek for substitutes in the bazaars and neighboring forests. In this context he was able to draw up an account which he forwarded to the Madras Medical Board, who published it in a volume of official reports (Madras, 1855, p. 406). This was his first

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contribution on the indigenous drugs, to which later he devoted so much attention.

In 1853 he returned from Burma and was appointed Residency Surgeon at Travancore and in 1856 he became Durbar Physician to the Maharaja of Travancore. Now Waring started systematic studies on Indian medicinal flora, which he largely published in the *Madras Quarterly Journal of Medical Science*, which was accessible at the Connemara Public Library, Madras.[12]

His first paper in the series started with:

> It is the part of a wise and prudent man, whatever may be his position or profession, to make himself acquainted with the resources of the country in which his lot is cast. It cannot admit of a doubt with the Great Continent of India contains many valuable medicinal products; and the Medical Officer, whose temporary or permanent home is in this land, will do well to cultivate a knowledge of those indigenous agents, which he may turn to account in the practice of his profession.'[13]

The paper dealt with Indigenous Demulcents, Diuretics, and Diaphoretics.[13] There followed papers on Indigenous Purgatives,[14] Emetics,[15] and Antidotes to Snakebites.[16,17] Attention was also drawn to Inorganic Substances.[18]

In an overall contemporary review of his work, it was stated that 'Mr Waring has done good service from time to time in directing attention to this important matter. Since the days of Ainslie, no one has so successfully labored in the comparatively untrodden field of Indian Materia Medica ...'[19] Waring later elaborated upon indigenous drugs through his *Remarks on Some of the Bazar Medicines and Common Medical Plants of India,* of which two editions[20,21] were available in the Calcutta Medical College Library. The Preface of the 1874 edition[20] traces the history of the publication:

> Fourteen years have elapsed since this work, in the elementary form, was first issued for the use of the District Vaccinators of Travancore, whose sphere of action was far removed from regular medical aid. It was originally published in English and Tamil on opposite pages; subsequently it was reprinted in Tamil alone by the London Missionary Society's Press at Nagercoil, for the uses of catechists and others connected with the Mission. In 1868, a Malayalam translation, by Dresser Ramaswamy Rajoo, was issued by the Travancore Government. From reports received from various quarters, there is reason to believe that the work has enjoyed a wide circulation amongst the people of Travancore and Tinnevelly, and it has exercised a considerable influence on the practice of the native doctors of these districts.[20]

The 1874 and 1883 editions of the *Remarks on some of the Bazar Medicines* there was a full index of diseases, indicating their treatment by these and other agents procurable throughout India, to which were added directions for treatment in cases of drowning, snake bites, etc.

In 1863, in consequence of failing health, Dr Waring returned to England.[4] He took some months of much needed rest. In the following year he was made a Fellow of the Royal College of Surgeons; in 1865 he took the degree of MD at St. Andrew's University and in 1866 became a Member of the Royal College of Physicians of London by examination, of which he was elected a Fellow in 1871.

Pharmacopoeia of India 1868

Several years back an in-depth study was carried out resulting in the publication a research monograph.[22] The beginning of the Indian pharmacopoeial publication was traced to the year 1837, when the Government appointed a Committee to examine and report upon the start of the East India Company's Dispensary and the possibility of using indigenous remedies. William Brooke O'Shaughnessy, Professor of Chemistry and Materia Medica at the Calcutta Medical College, was a prominent member of the Committee. O'Shaughnessy brought out the *Bengal Dispensatory and Pharmacopoeia,* generally known as the *Bengal Dispensatory,* and the *Bengal Pharmacopoeia and General Conspectus of Medicinal Plants* (1844), generally known as the *Bengal Pharmacopoeia.* Though the idea of preparing an Indian pharmacopoeia was first mooted in 1837, there was lull for two decades after publication of the *Bengal Pharmacopoeia.* Proposals pertaining to the Pharmacopoeia started moving again when on 4 March 1864 Edward John Waring, Assistant Surgeon in the Indian Army on Madras Establishment, addressed a proposal on the topic to the Under Secretary of State for India.[23] He referred to advances in the knowledge of medicinal resources of India since publication of the *Bengal Pharmacopoeia* in 1844 and also publication of the *British Pharmacopoeia 1864* by the Medical Council in United Kingdom and stated:

> Under the circumstances, with the view, first, of bringing an official and succinct form to the notice of the Indian practitioner those indigenous drugs which European experience has proved to be valuable in practice; and secondly, of assimilating the formulae of the old *Bengal Pharmacopoeia* with the standard now established by the Medical Council, I am induced to propose the publication of a work entitled 'The Pharmacopoeia of India' to be issued officially for use in all parts of our Indian possessions.

Waring prepared a well reasoned case and suggested constitution of a Committee for the purpose and also suggested that the work for preparing the pharmacopoeia might be done in London. The proposal by Waring was largely welcome. J Shaw, Officiating Principal Inspector General, Medical Department, Fort Saint George, Madras, supported Waring and opined that 'a work such as the proposed Pharmacopoeia of India would be of greatest value to medical men in India'; and Sir J Ranald Martin thought 'that India with its enormous medicinal resources should have the Pharmacopoeia made up to the knowledge of the day.' John Forbes Watson also supported the project and made suggestions regarding the composition of the Committee for the purpose. There was a dissenting view expressed, however, by R Haines,

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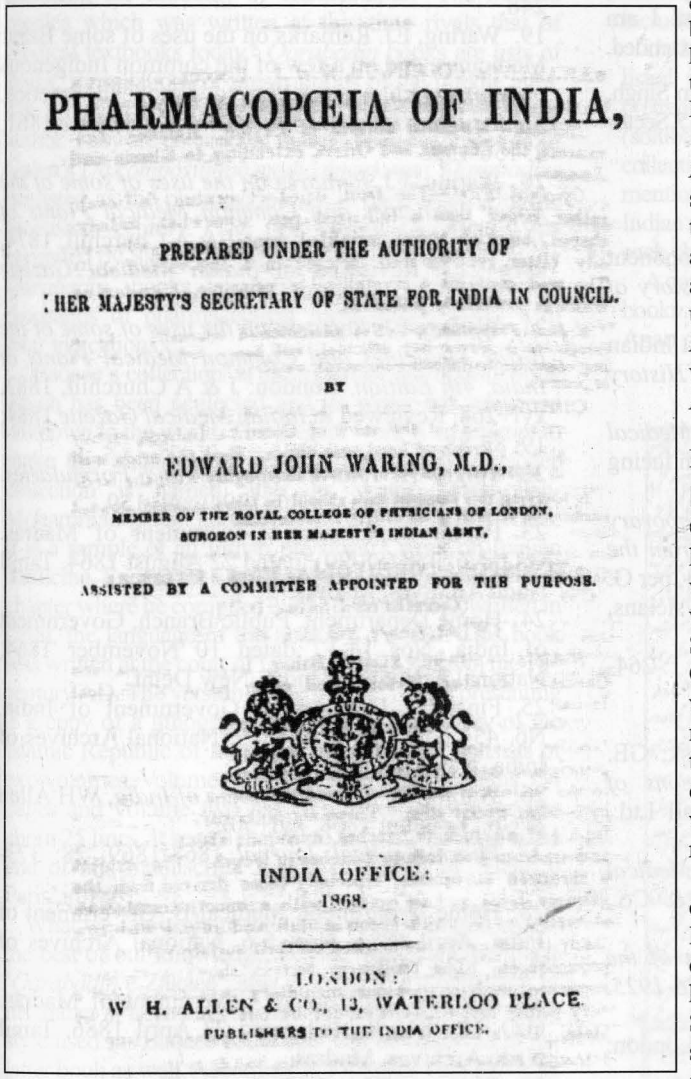
Professor of Materia Medica, Grant Medical College, Bombay.[24]

The India Office accepted the proposal and entrusted to work for preparing the Pharmacopoeia to EJ Waring.[25] He was to work under the supervision of the Committee of which he was named a member, with Sir J. Ranald Martin as the President. The orders were given through India Office letters of 10 March 1865 to Sir Ranald Martin, who was also in England at the time.

The preface to the first official *Pharmacopoeia of India,*[26] published in 1868, provides information on the follow-up subsequent to the initial proposal by Edward John Waring, who was to act as editor of the Pharmacopoeia.



PHARMACOPŒIA OF INDIA,

PREPARED UNDER THE AUTHORITY OF

HER MAJESTY'S SECRETARY OF STATE FOR INDIA IN COUNCIL.

BY

EDWARD JOHN WARING, M.D.,

MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON,
SURGEON IN HER MAJESTY'S INDIAN ARMY,

ASSISTED BY A COMMITTEE APPOINTED FOR THE PURPOSE.

INDIA OFFICE:
1868.

LONDON:
W. H. ALLEN & CO., 13, WATERLOO PLACE.
PUBLISHERS TO THE INDIA OFFICE.

Figure 2. Title page of the first *Pharmacopoeia of India* (1868).

The Government considered the project to be important and the Secretary organised a Committee presided over by Inspector-General of Hospitals Sir J Ranald Martin, CB, FRS, with a distinguished membership; five of the eight members were Fellows of the Royal Society of London. The members mostly had experience of working in India. The Committee had their first meeting at the India Board Office, Cannon Row, London, on 15 March 1865. All the Committee work was done in London and the Pharmacopoeia was published from London, with the authority of the Secretary of State for India. Monographs of the selected materials were divided into 'officinal'; and 'non-officinal' classes.

In a review on the Pharmacopoeia there were some critical comments but the view was also expressed:

> The volume is a mine of wealth for those who desire to become acquainted with the indigenous drugs of India, we cannot but believe that as our knowledge of these becomes more extended, many of them but little known at present, but of undoubted efficacy, will find their appropriate place in the British and other Pharmacopoeias of Europe and America.[27]

Up to around 1885, the *Pharmacopoeia of India 1868* used to be on the list of stores supplied by the medical depots; however, soon the *British Pharmacopoeia* became the 'sole authority on all matters relating to pharmacy' and the Government of India sanctioned 'its use to military hospitals in lieu of the *Indian Pharmacopoeia*.[28-29] The situation changed with the publication of a new *British Pharmacopoeia* in 1885.

Dr Waring retired from Madras Establishment Service in 1869.[4]

Epilogue

On retirement from Service and living in London he continued with his literary activities. The result was the preparation of *Bibliotheca Therapeutica,* which was published in two volumes by the New Sydenham Society[30,31] and were available at the Calcutta Medical College Library. The contents were chiefly in reference to articles of materia medica with numerous critical, historical, and therapeutical annotations and an appendix containing the bibliography of British mineral waters. These books were brought together as the result of upwards of twenty years of hard work.

As his eyesight completely failed him he could not continue with his library work. The large and valuable library which he had been collecting for many years was presented by him, in February 1887, to the Army Medical School in Netley, Hampshire. The number of separate works presented by Dr Waring, was about 350, comprising between 600 and 700 volumes, dealing with materia medica of several countries.[4]

Dr Waring was a Surgeon-Major (retired) of the Indian Army, a Fellow of the Linnean Society and of the Royal Medical and Chirurgical Society, and an Honorary Member of the Société de Pharmacie of

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Paris, and the Companionship of the Order of the Indian Empire was conferred on him in 1881.[4]

Dr Waring occupied himself largely with philanthropic work; he was one of the original committee of the London Medical Mission, St. Giles's, London and took an active part in promoting its labours.[5]

Edward John Waring, MD, FRCP, FRCS, FLS, CIE passed away in London at the age of 71 in 1891.[5,6]

Acknowledgement

The libraries in India which I personally visited in search of source material have been named above in the body of the paper. Certain others from which I obtained the documents through correspondence included the Royal Society, London; the Royal College of Physicians, London; and the Wellcome Institute, London. I am thankful to all of the institutions for the courtesy extended.

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'Baqaee Collection': A *Qarabadin* book of the 18th century

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Islamic-Iranian medicine is an influential system in the history of medicine,[1,2] and with other branches of science it developed during the Islamic golden era. In this period medical colleges were established in the Islamic empire including the academy of *Gundishapur*.[3] The materia medica which was written at this time rivals that of medical textbooks today.[4] *Qarabadin* books are lists of drugs, formulations or prescriptions of the middle ages. The arrangement of the formulary varies from author to author. They are considered to have been originated from Galen's *De compositione medicamentorum*. *Qarabadins* persisted as the pharmacopoeias of their time until the nineteenth century.[5] The first known *Qarabadin* was compiled by Sābūr ibn Sahl (AD 869).[6] There are many *Qarabadin* books available today which contain thousands of pharmaceutical formulations along with their indications.

'Baqaee's collection' is an important *Qarabadin* book which has been neglected and its writer has remained unknown to the world. The present work is an attempt to make this valuable manuscript better known. Baqaee collection is named after its writer Zakaa-ollah-Mohammad Ismail known as Mohammad Bagqa-Khan. It is a sample of an Indian physician's work on Iranian medicine. Except for a few paragraphs at the end of each chapter where he compiles Indian formulations written in Urdu, the language of the books is Persian. This book was written at the court of Islamic Indian kings in the 18th century AD. The version of the treatise we are presenting is a copy of a lithograph available in the library of the Islamic Republic of Iran's parliament and it consists of two volumes. Volume one of the lithograph contains 554 pages and volume two has 511 pages; each page has about 25 lines. It seems that there are parts missing at the end of this manuscript. It was published by 'Hend o Paris' in 1861.

What we know about the writer is very limited but, to the best of our knowledge, he has written another book '*Qarabadin* e Zakaee', also in Farsi. It is a collection of his father's formulations and prescriptions. The same style used in 'Baqaee collection' can be observed in the latter book as well. According to Professor Hakim Nayer Vaseti '*Qarabadin* e Zakaee' was written in 1209 (AH), 1794 (AD).[7] In the introductory part of '*Qarabadin* Baqaee' Mohammad Baqa Khan has pointed out his father's scientific position and that the foundation of this valuable book was his medical experiences and notes. He stated in Baqaee collection that starting to gather his father's notes he thought it would be more helpful if he wrote a book which made physicians independent of referring to other *Qarabadins*.

Structure of Baqaee Collection

Chapters in the book are organised according to the systems of the human body. Within each chapter the formulations are included according to their dosage forms in alphabetical order. Each category of formulation and their preparation methods and techniques, constituents, shelf life and inventors of each preparation or category in general are then described. What is very impressive is that even the nutritional diets that were recommended to patients by famous physicians have been gathered in this book for each illness. The writer states that every multi-component formulation and their indications known in his time that he found has been included.

Under methods of preparation, each component is listed in order of quantity. General preparation and pretreatment methods such as harq (Burns), hal (solubilising) and qosl (wash) are included in this collection. General treatments of diseases are also mentioned and their etiology briefly explained. Popular Indian and Greek formulations are presented at the end of each chapter.

A considerable number of medical and pharmaceutical books could be named as the sources of this collection. Apart from a few novel points from the writer or his

Figure 1. An example of a topical formulation from the Baqaae collection.

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An example formulation from the book

Lotukh

The word means 'applied on' and as a medical term it means a dosage form which is applied topically to keep a surface moist.

A **Lotukh** which is used to treat Shaqiqeh (a category of headache) (Figure 1):

Mohr (*Commiphora myrrha*)		
Tokhm kahoo (*Lactuca sativa)*	of each	5 Derhams
Bazr al banj (*Hyoscyamus niger*)		
Katira *(Astraglus gossypinus)*	of each	2 Dang
Afyoon (*Papaver somniferum)*		0.5 Dang.

Note: 1 Derham= 3.6g; 1 Dang= 0.6g

Ingredients should be triturated and sieved, then mixed with vinegar, put on a piece of paper and pasted on the temple.

father's experience, this collection is compiled from the most important *Qarabadin* of the Islamic era. These include the *Qarabadins* Shafaaee, Jalaali, Najibi, Qalaanesi as well as *Qarabadin* topics from Bin Sina's [Avicenna's] *Canon* with Hakim Ali Gilaani's footnotes, Zakhireh Kharazmshaahi, Teb Daar al Shokoohi, Morakabaat shaahi, Morakabaat Tazkareh Daavoodi, Tohfat al Momenin, and formulations of Kefaayat al Teb. He used medical abstract books (Konash) such as Konaash e Fakher, Konaash e Johanna as well.

Persian books of this era are usually organised according to 'Fosool' and 'Abvaab' (chapters) but divisions of this book are different and called 'Maktoob', which could be considered as chapters of the book. Each 'Maktoob' contains subchapters called 'Malfooz', 'Tamaheed', 'Kalameh' and 'Khatemeh'. For example the first 'Maktoob' is the CNS chapter, which contains 4 malfooz; the first malfooz is headache and has 21 kalameh which are formulations placed in the alphabetic order. The last 'Malfooz' of each chapter contains general considerations and techniques which have been used in the preparation of the formulations of that chapter. The Baqaee book is made up of 12 Maktoob or chapters. The first chapter is dedicated to CNS medicine and food; the second to the eye; third to the ear and nose; fourth to the mouth, gums, teeth, tonsils, throat, and larynx; fifth to the heart, sixth to respiratory system and tuberculosis. The seventh chapter is about liver problems, biliary duct and spleen; the eighth is about the intestines and rectum; ninth the urinary tract and sexual system; tenth is the joint, muscles and bone chapter; the eleventh fever and the twelfth is dedicated to dermatology and cosmetics.

It is clear that this valuable book has great potential in opening new windows to therapeutics and the formulations that could be studied by medical and pharmaceutical researchers.

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